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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,082	12/02/2003	Takaya Ono	450100-04842	4740
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William S. Frommer, Esq. FROMMER LAWRENCE & HAUG LLP 745 Fifth Avenue New York, NY 10151		EXAMINER DANG, HUNG Q		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/726,082

Applicant(s)

ONO ET AL.

Examiner

Hung Q. Dang

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7-16 and 19-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-16 and 19-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/14/2004, 07/27/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 11/19/2007 have been fully considered but they are not persuasive.

At page 15, Applicant argues that Shagam fails to teach or suggest the feature of "size-determining means for determining whether or not the consecutive empty areas which follow the predetermined-sized consecutive empty areas reserved by said area-reserving means have a size less than the predetermined size."

In response, the Examiner respectfully disagrees. First, at least in column 10, lines 43-48, Gotoh already discloses predetermined-sized consecutive empty areas of 5 MB in size reserved by the area-reserving means. However, Gotoh does not disclose reserve more spaces from scattered empty areas, which, due to the phenomenon of fragmentation, cannot be used because they are too small to make up a complete LBN. For example, referring to table C3 of Fig. 3, Gotoh discloses the free or empty areas including LBN 3568 to 3584. Now, consider a situation in which the remaining content to be recorded is 6 MB while only one LBN is left for that empty area.

In column 2, lines 2-4, Shagam describes a situation where a file of 40 tracks in size will not be allocated to the disk that has 40 tracks in free total size. This is because this amount of memory is scattered over many noncontiguous areas. One of ordinary skill in the art would recognize the determination of not to allocate the file to the disk must involve the step of determining that each of those noncontiguous areas does not have enough space for the file, which is equal to a predetermined value. Otherwise, the

file should have been recorded to the disk. Having said that, the Examiner respectfully submits that Shagam does disclose the feature of size-determining means for determining whether or not the consecutive empty areas have a size less than the predetermined size.

One of ordinary skill in the art would recognize that the teachings of Shagam can be applied to Gotoh to reserve more space even by defragmenting the disk; thus, together disclose the feature of "size-determining means for determining whether or not the consecutive empty areas which follow the predetermined-sized consecutive empty areas reserved by said area-reserving means have a size less than the predetermined size."

This combination is well motivated because it helps manage the disk space for efficient storage.

At page 15, Applicant argues that Gotoh does not disclose the feature of "area-reserving means for reserving, as reserved areas, predetermined-sized consecutive empty areas having a predetermined size for guaranteeing a real-time playback from among recording areas on the recording medium."

In response, the Examiner respectfully disagrees. As shown in Fig. 3 and further described in column 9, lines 61-65, column 10, lines 43-48, column 11, lines 45-57, and column 14, lines 10-18, Gotoh area-reserving means for reserving, as reserved areas, predetermined-sized consecutive empty areas having a predetermined size from among recording areas on the recording medium. In these cited texts, Gotoh describes each LBN of 5 MB is searched, assigned as free areas, and specified as recording areas if

they are unallocated. Further, in column 10, lines 18-24, Gotoh recites, "uninterrupted reproduction of a video or a sound is ensured during the AV data reproduction ..."

Obviously, Gotoh is teaching into reservation of memory areas "for guaranteeing a real-time playback."

For that reason the feature of "area-reserving means for reserving, as reserved areas, predetermined-sized consecutive empty areas having a predetermined size for guaranteeing a real-time playback from among recording areas on the recording medium" is also disclosed by Gotoh. The rejections thus stand as previously rejected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 13-16, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gotoh et al. (US Patent 6,314,235), Tsumanari et al. (US Patent 6,360,057), and Shagam (US Patent 6,205,529).

Regarding claim 1, Gotoh et al. disclose a recording control apparatus for controlling AV data recording on a recording medium (column 16, lines 36-57), comprising: area-reserving means for reserving, as reserved areas, predetermined-sized consecutive empty areas having a predetermined size for guaranteeing a real-time playback from among recording areas on the recording medium (Fig. 3; column 9, lines 61-65; column 10, lines 18-24, 43-48; column 11, lines 45-57; column 14, lines 10-

18); recording control means for controlling recording of AV data in the reserved areas (column 10, lines 3-6, 49-54; column 14, lines 19-30; column 16, lines 32-52); and area-freeing means for freeing, as empty areas, a remaining part of the reserved areas in which the data in units of packets is not recorded (Fig. 3; column 17, lines 25-34). Gotoh et al. also disclose additional reserving means for additionally reserving, as the reserved areas, consecutive empty areas which follow the predetermined-sized consecutive empty areas reserved by said area-reserving means (column 10, lines 43-48; column 11, lines 45-48).

However, Gotoh et al. do not disclose data in units of packets. Also, Gotoh et al. do not disclose size-determining means for determining whether or not the consecutive empty areas which follow the predetermined-sized consecutive empty areas reserved by said area-reserving means have a size less than the predetermined size, wherein, when the consecutive empty areas which follow the predetermined-sized consecutive empty areas reserved by said area-reserving means have a size less than the predetermined size, said additional reserving means additionally reserves, as the reserved areas, the consecutive empty areas which have the size less than the predetermined size.

Tsumanari et al. disclose AV data, which is MPEG data in units of packets (Fig. 4; column 26, line 66 – column 27, line 5).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the MPEG data in units of packets disclosed by

Tsumanari et al. into the apparatus disclosed by Gotoh et al. to make the apparatus compatible with popular existing video standards.

However, the proposed combination of Gotoh et al. and Tsumanari et al. does not disclose size-determining means for determining whether or not the consecutive empty areas which follow the predetermined-sized consecutive empty areas reserved by said area-reserving means have a size less than the predetermined size, wherein, when the consecutive empty areas which follow the predetermined-sized consecutive empty areas reserved by said area-reserving means have a size less than the predetermined size, said additional reserving means additionally reserves, as the reserved areas, the consecutive empty areas which have the size less than the predetermined size.

Shagam discloses defragmenting means, in which size-determining means for determining whether or not the consecutive empty areas which follow the predetermined-sized consecutive empty areas reserved by said area-reserving means have a size less than a predetermined size (column 2, lines 1-8, the "predetermined size" is the size of the file to be recorded; see also "Response to Arguments" above), wherein, when the consecutive empty areas which follow the predetermined-sized consecutive empty areas reserved by said area-reserving means have a size less than the predetermined size, said additional reserving means additionally reserves, as the reserved areas, the consecutive empty areas which have the size less than the predetermined size (the reserved areas are merged by defragmentation in column 1, line 63 – column 2, line 26).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the defragmenting means disclosed by Shagam into the apparatus disclosed by Gotoh et al. and Tsumanari et al. because the defragmentation provides advantages of more efficient use of disk space as well as access speed of the data (Shagam, column 1, lines 45-65).

Regarding claim 2, Gotoh et al. also disclose data-existence determining means for determining whether or not data to be recorded on the recording medium exists (column 8, lines 57-63), wherein reservation of the predetermined-sized consecutive empty areas by said area-reserving means, and recording of the data in units of packets by said recording control means are repeatedly performed until there is no more data to be recorded on the recording medium (Fig. 1; column 10, lines 3-6, 49-54; column 14, lines 19-30; column 16, lines 32-52).

Regarding claim 3, Gotoh et al. also disclose among continuous empty areas of the recording areas on the recording medium which have a size equal to or larger than the predetermined size (column 13, lines 9-14), from a continuous empty area having the largest size (either "area 586-3584" or "area 3888 to end" of C2 in Fig. 3), a continuous empty area having the earliest position in order of reading or writing of data on the recording medium ("area 84 to 583" of C2 in Fig. 3), and a continuous empty area closest to one recording area having last recorded data ("area 3888 to end" of C2 in Fig. 3), one continuous empty area is reserved as each of the predetermined-sized consecutive empty areas by said area-reserving means (column 9, lines 61-65; column 10, lines 43-48; column 11, lines 45-57; column 14, lines 10-18).

Regarding claim 4, Gotoh et al. also disclose remaining-part determining means for determining whether or not the reserved areas include a remaining part in which the data is not recorded (column 17, lines 25-34, 7-11), wherein, when the reserved areas include the remaining part in which the data is not recorded, said remaining-part determining means frees the remaining part of the reserved area (compare C2 and C3 in Fig. 3).

Claim 13 is rejected for the same reason as discussed in claim 1 above.

Claim 14 is rejected for the same reason as discussed in claim 2 above.

Claim 15 is rejected for the same reason as discussed in claim 3 above.

Claim 16 is rejected for the same reason as discussed in claim 4 above.

Claim 25 is rejected for the same reason as discussed in claim 1 above.

Claims 7-9 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gotoh et al. (US Patent 6,314,235), Tsumanari et al. (US Patent 6,360,057), and Shagam (US Patent 6,205,529) as applied to claims 1-4, 13-16, and 25 above, and further in view of Ando et al. (US Patent 6,373,803).

Regarding claim 7, see the teachings of Gotoh et al., Tsumanari et al., and Shagam as discussed in claim 1 above. However, the proposed combination of Gotoh et al., Tsumanari et al., and Shagam does not disclose packetization means for packetizing data into packets each having a size by which alignment is established with physical unit areas on the recording medium, wherein said recording control means controls recording of the data in units of the packets.

Ando et al. disclose an MPEG packetization means for packetizing data into packets (column 17, line 49 – column 18, line 14) each having a size by which alignment is established with physical unit areas on the recording medium (Fig. 1h-i; Fig. d-e), wherein said recording control means controls recording of the data in units of the packets (column 14, line 57 – column 15, line 10) .

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the MPEG packetization means disclosed by Ando et al. into the apparatus disclosed by Gotoh et al., Tsumanari et al., and Shagam to make the apparatus compatible with video data of popular existing standards such as MPEG.

Regarding claim 8, Ando et al. also disclose said packetization means comprises: data-storage means for temporarily storing data (column 15, lines 5-14); storage-amount determining means for determining the amount of data stored in said data-storage means (the “amount of data” to be determined is the size of an ECC block in column 46, lines 12-15, which is equal to that of 16 sectors); and data-extracting means in which, when the amount of data stored in said data-storage means reaches a reference value, data having a size by which alignment is established with the physical unit areas on the recording medium and which is closest to the reference size is extracted from said data-storage means and is output as a packet having a size by which alignment is established with the physical unit areas on the recording medium (column 46, lines 6-26; column 7, lines 13-23; with “reference value” equal to size of either an ECC block or a stream block. Either an ECC block or a stream block is aligned with physical sectors, which are the physical unit areas).

Regarding claim 9, Ando et al. also disclose said data-extracting means extracts, from said data-storage means, data having the maximum size by which alignment is established with the physical unit areas on the recording medium (column 46, lines 6-26; column 7, lines 13-23; data are extracted and recorded in units of either an ECC block or a stream block. Either an ECC block or a stream block is aligned with physical sectors, which are the physical unit areas. The stream block has maximum size by which alignment is established with the physical unit areas).

Claim 19 is rejected for the same reason as discussed in claim 7 above.

Claim 20 is rejected for the same reason as discussed in claim 8 above.

Claim 21 is rejected for the same reason as discussed in claim 9 above.

Claims 10-12 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gotoh et al. (US Patent 6,314,235), Tsumanari et al. (US Patent 6,360,057), Shagam (US Patent 6,205,529), and Ando et al. (US Patent 6,373,803) as applied to claims 1-4, 7-9, 13-16, 19-21, and 25 above, and further in view of Sanami (US Patent 6,014,368).

Regarding claim 10, see the teachings of Gotoh et al., Tsumanari et al., Shagam, and Ando et al. as discussed in claim 7 above. Further, Gotoh et al. also disclose and said recording control apparatus further comprises multiplexing means for multiplexing the packets corresponding to the plurality of data series which are output from the packetization means (Fig. 8c; column 17, lines 1-4).

However, the proposed combination of Gotoh et al., Tsumanari et al., Shagam, and Ando et al. does not disclose said packetization means comprises a plurality of packetization means for packetizing a plurality of data series into packets;

Sanami discloses packetization means comprises a plurality of packetization means for packetizing a plurality of data series into packets (column 8, lines 25-28; and Fig. 1).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the packetization means that comprises a plurality of packetization means disclosed by Sanami into the apparatus disclosed by Gotoh et al., Tsumanari et al., Shagam, and Ando et al. to implement parallel packetization. The incorporated feature would increase the speed of data processing, thus, enhancing the performance of the system.

Regarding claim 11, Ando et al. also disclose said plurality of multiplexing means multiplex the packets corresponding to the plurality of data series in ascending order of the presentation times of data items allocated in the packets (Fig. 10; column 18, lines 22-24; column 24, lines 5-15).

Regarding claim 12, Ando et al. also disclose said plurality of multiplexing means multiplex the packets corresponding to the plurality of data series in ascending order of the presentation times of data items allocated in packets (Fig. 10; column 18, lines 22-24; column 24, lines 5-15) which each have a size equal to a reference value and which are obtained when the plurality of data series are packetized (column 24, lines 5-15; Fig. 8h; Fig. 1i with the reference value being the size of a sector).

Claim 22 is rejected for the same reason as discussed in claim 10 above.

Claim 23 is rejected for the same reason as discussed in claim 11 above.

Claim 24 is rejected for the same reason as discussed in claim 12 above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Q. Dang whose telephone number is 571-270-1116. The examiner can normally be reached on M-Th:7:30-6:00.

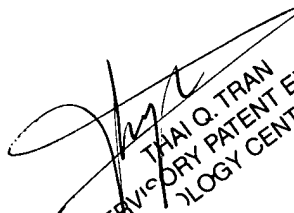
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thai Tran can be reached on 571-272-7382. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Hung Dang
Patent Examiner


THAI Q. TRAN
SUPERVISORY PATENT EXAMINER
BIOLOGY CENTER 2600